

REMARKS

Claims 1-6 are pending. By the Office Action, the specification is objected to and claims 1-4 are rejected. By this Amendment, the specification is amended and claims 5 and 6 are added. No new matter is added.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

I. SPECIFICATION

A. Specification Amendment

JP '756 is the priority document for the above-identified U.S. Application. A Claim for Priority was filed on December 5, 2000, and acknowledged by the present Office Action on April 25, 2002. By this amendment, Applicants delete reference to the priority application from page 14 of the present specification.

B. Objection

The specification is objected to under 35 U.S.C. §112, first paragraph, for allegedly failing to provide an adequate written description of the invention. Specifically, the specification is objected to for allegedly incorporating essential material by reference to a foreign test standard. Applicants respectfully traverse the rejection.

Claims 1-4 are directed to a backprinting recording medium having a particular Shore D hardness. The claims are not directed to a method of calculating Shore D hardness. Although JIS Z-2246 illustrates the state of the art method for calculating the Shore D hardness, the complete details of JIS Z-2246 itself is not necessary for making and using the claimed backprinting recording medium. One skilled in the art would be familiar with the details of JIS 2-2246, as well as the English-language Standards that are substantially the same as JIS Z-2246. These include: ASTM D2240, ISO868 and ISO7619. A copy of ASTM D2240 is enclosed for the Examiner's convenience.

All that is required of a specification is that it provide an adequate description of the invention so as to enable one of ordinary skill in the art to make and use the claimed invention. It is not required that a specification be an entire treatise on the field of art to which the invention applies. Rather, it is only necessary that a specification communicate knowledge as it would be communicated among those of ordinary skill in the art, building upon information already known and understood in the art. Applicants' specification with respect to the Shore D hardness more than adequately communicates sufficient knowledge to enable one of ordinary skill in the art to practice the claimed invention without undue experimentation.

In particular, by referring one of ordinary skill in the art to the specific standard under which the penetration was determined, one of ordinary skill in the art could readily obtain the standard or its equivalents (which is available in both the Japanese and English languages) and practice the claimed invention so as to obtain the Shore D hardness measurements. It hardly entails undue experimentation for one of ordinary skill in the art to acquire a copy of a publicly available standard specifically identified in the specification. In referring to this specific standard under which the Shore D hardness is determined, the specification adequately and clearly defines the invention.

MPEP §6083.01(p) defines non-essential subject matter as subject matter referred to for purposes of indicating the background of the invention or illustrating the state of the art. (Emphasis added.) JIS Z-2246 is referenced at page 4, lines 23-24 and page 11, lines 9-12, of the present specification in order to illustrate the state of the art standard for measuring Shore D hardness. Thus, reference to JIS Z-2246 is at most the incorporation of non-essential subject matter, and not the incorporation essential material.

For at least the reasons discussed above, Applicants submit that the reference to JIS Z-2246 in the present specification does not incorporate essential subject matter.

Accordingly, the present specification satisfies the written description requirements of §112, first paragraph. Reconsideration and withdrawal of the objection are respectfully requested.

II. CLAIMS

A. Claim Amendment

New claims 5 and 6 are patentable over the cited references. Support for new claims 5 and 6 can be found in the present specification, at least on page 5, lines 11-16. Thus, the addition of claims 5 and 6 do not introduce new matter.

B. §112 Rejection

Claims 1-4 are rejected under 35 U.S.C. §112, first paragraph, for the reasons set forth in the objection to the specification. Applicants respectfully traverse the rejection.

As discussed above, claims 1-4 are directed to a backprinting recording medium having a particular Shore D hardness. The claims are not directed to a method of calculating Shore D hardness. JIS Z-2246 is not necessary for making and using the claimed backprinting recording medium. Applicants disclose, at least at page 8, line 13 to page 11, line 9, how to make the claimed backprinting recording medium. Applicants further disclose, at least on page 13, lines 1-8, how to use the claimed backprinting recording medium.

For at least the reasons discussed above, Applicants submit that claims 1-4 satisfy the written description requirements of §112, first paragraph. Reconsideration and withdrawal of the rejection are respectfully requested.

C. §103 Rejection Over Arai

Claims 1-4 are rejected 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,686,118 to Arai et al. (Arai). Applicants respectfully traverse the rejection.

Claims 1 is directed to, inter alia, a backprinting recording medium comprising a porous ink-permeable layer produced by dispersing a filler in a binder resin, wherein the binder resin has a glass transition temperature of 10°C or higher, and a Shore D hardness at 25°C of 40 or higher. Applicants submit that Arai does not teach or suggest at least a binder

resin having a glass transition temperature of 10°C or higher and a Shore D hardness at 25°C of 40 or higher, or the unexpected advantages that Applicants have discovered resulting from the claimed glass transition temperature and Shore D hardness value.

The Office Action asserts that Applicants admit that all polyester-based binder resins necessarily have the claimed characteristics for glass transition temperature and hardness. The Office Action cites page 5, lines 3-19 of the present specification in support of this assertion. However, Applicants submit that the Office Action misinterpreted and improperly applied the disclosure on page 5 of the present specification. Applicants' disclosure is not an admission that all types of the disclosed example binder resins have the claimed characteristics for glass transition temperature and hardness.

At page 5, lines 3-10 of the present specification, Applicants disclose that excessively high glass transition temperature causes deterioration in the flexibility of the ink-permeable layer, and that too high of a Shore D hardness (at 25°C) causes the ink-permeable layer to become brittle. Applicants further disclose that, in order to avoid these problems, the glass transition temperature of the present invention may preferably be 130°C or lower and more preferably 100°C or lower, and the Shore D hardness (at 25°C) of the present invention may be 90 or lower and more preferably 80 or lower.

At page 5, lines 11-16 of the present specification, Applicants disclose examples of binder resins, such as polyester based resins, that can be used if they have the desired glass transition temperature and Shore D hardness. That is, Applicants do not assert that all types of the stated example binder resins necessarily have the desired glass transition temperature and Shore D hardness, but rather only disclose that representative members of those resins can be selected to provide the stated properties. For example, Applicants disclose that a polyester-based resin having a glass transition temperature of 130°C or lower and a Shore D hardness (at 25°C) of 90 or lower can be used. However, Applications do not disclose that

any polyester-based resin will inherently have a glass transition temperature of 130°C or lower and a Shore D hardness (at 25°C) of 90 or lower.

As can clearly be seen in Tables 2 on page 12 of the present specification, Comparative Examples 1 and 2 include polyester-based resins that do not have the claimed glass transition temperature and Shore D hardness (at 25°C). Similarly, as can clearly be seen in Table 3 on page 12 of the present specification, Comparative Example 3 includes an additional polyester-based resin that does not have the claimed glass transition temperature and Shore D hardness (at 25°C). Applicants disclosure on page 5 was clearly not an admission that all polyester-based resins have the claimed glass transition temperature and Shore D hardness, because Applicants disclose specific examples of polyester-based resins that do not have the claimed features.

For at least these reasons, Applicants submit that the Office Action misinterpreted the disclosure on page 5 of the present specification, and Applicants assert that the disclosure was not an admission that all polyester-based binder resins necessarily have the claimed characteristics for glass transition temperature and hardness.

Accordingly, it is improper for the Office Action to assert Applicants' own disclosure, which describes only Applicants' own claimed invention, against Applicants in the form of an alleged Applicants' Admission. The cited passage is not an admission, and the purported inherency asserted by the Office Action is specifically contradicted by the remainder of Applicants' disclosure.

In contrast to the claimed invention, which requires specific values of the glass transition temperature and Shore D hardness, Arai provides no disclosure of the claimed glass transition temperature and Shore D hardness (at 25°C) for a binder resin. Arai further does not teach or suggest that either the glass transition temperature or Shore D hardness, much less both combined, provide any benefits to the recording medium. In the absence of such teachings, one of ordinary skill in the art would not have been motivated, based only on the

disclosure of Arai, to specifically select binder resins that satisfy the instantly claimed property values. Any such motivation to select the binder resins and the properties thereof comes only from Applicants' own disclosure, which is clearly improper.

Thus, for at least these reasons, the Office Action fails to set forth even a *prima facie* case of obviousness of the claimed invention. The claimed invention would thus not have been obvious to one of ordinary skill in the art over Arai.

Furthermore, the claimed invention provides unexpected results on the disclosure of Arai. MPEP §716.02(a) indicates that evidence of unobviousness or unexpected advantageous properties, such as superiority in a property the claimed compound shares with the prior art, can rebut *prima facie* obviousness. "Evidence that a compound is unexpectedly superior in one of a spectrum of common properties...can be enough to rebut a *prima facie* case of obviousness." No set number of examples of superiority is required. *In re Chupp*, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987).

Referring to Tables 2 and 3, Applicants have discovered that a backprinting recording medium comprising a porous ink-permeable layer produced by dispersing a filler in a binder resin having a glass transition temperature of 10°C or higher and a Shore D hardness at 25°C of 40 or higher (Working Examples 1-7) provides unexpected advantages over a backprinting recording medium lacking these features (Comparative Examples 1-3). Specifically, Applicants have discovered at least the following unexpected advantages: (1) the absence of visible feed roller marks on the backprinting recording media and (2) the same print quality in areas held between feed rollers and areas without any contact with the rollers. See, for example, page 13, line 1 to page 14, line 9, of the present specification. None of these advantages, or a method to obtain the advantages, are taught or suggested by Arai.

In view of the disclosed unexpected advantages, Applicants submit that a backprinting recording medium comprising a porous ink-permeable layer produced by dispersing a filler in a binder resin, wherein the binder resin has a glass transition temperature of 10°C or higher,

and a Shore D hardness at 25°C of 40 or higher, as claimed in claim 1, would not have been obvious to one skilled in the art, based solely on the disclosure of Arai. Accordingly, claim 1 is patentable over Arai.

Claims 2-4 ultimately depend from claim 1, and thus include all of the limitations of claim 1. Accordingly, claims 2-4 are patentable over Arai for at least the reasons that claim 1 is patentable over Arai. Reconsideration and withdrawal of the rejection are respectfully requested.

D. §103 Rejection Over Onishi

Claims 1 and 2 are rejected under 35 U.S.C. §103(a) as being unpatentable over EP 0841185 A1 to Onishi (Onishi). Applicants respectfully traverse the rejection.

Claim 1 and the unexpected advantages that result from the features of claim 1 are discussed above. Applicants submit that Onishi does not teach or suggest at least a binder resin having a glass transition temperature of 10°C or higher and a Shore D hardness at 25°C of 40 or higher, or the unexpected advantages that Applicants have discovered resulting from the claimed glass transition temperature and Shore D hardness value.

Similar to Arai, above, the Office Action asserts that Applicants admit that all polyvinyl alcohol-based binder resins necessarily have the claimed characteristics for glass transition temperature and hardness. As above, the Office Action cites page 5, lines 3-19 of the present specification in support of this assertion. However, as discussed above, Applicants submit that the Office Action misinterpreted and misapplied the disclosure on page 5 of the present specification.

At page 5, lines 11-16 of the present specification, Applicants disclose polyvinyl alcohol-based resins as an example of binder resins that can be used in the present invention if they have a glass transition temperature of 130°C or lower and a Shore D hardness (at 25°C) of 90 or lower. Applicants do not assert that any polyvinyl alcohol-based resin will inherently have the desired glass transition temperature and Shore D hardness (at 25°C).

Thus, the disclosure on page 5 of the present specification is not an admission that all types of polyvinyl alcohol-based binder resins necessarily have the claimed characteristics for glass transition temperature and hardness.

In contrast to the claimed invention, which requires specific values of the glass transition temperature and Shore D hardness, Onishi provides no disclosure of the claimed glass transition temperature and Shore D hardness (at 25°C) for a binder resin. Onishi further does not teach or suggest that either the glass transition temperature or Shore D hardness, much less both combined, provide any benefits to the recording medium. In the absence of such teachings, one of ordinary skill in the art would not have been motivated, based only on the disclosure of Onishi, to specifically select binder resins that satisfy the instantly claimed property values. Any such motivation to select the binder resins and the properties thereof comes only from Applicants' own disclosure, which is clearly improper.

Thus, for at least these reasons, the Office Action fails to set forth even a prima facie case of obviousness of the claimed invention. The claimed invention would thus not have been obvious to one of ordinary skill in the art over Onishi.

Furthermore, in view of the disclosed unexpected advantages, Applicants submit that a backprinting recording medium comprising a porous ink-permeable layer produced by dispersing a filler in a binder resin, wherein the binder resin has a glass transition temperature of 10°C or higher, and a Shore D hardness at 25°C of 40 or higher, as claimed in claim 1, would not have been obvious to one skilled in the art, based solely on the disclosure of Onishi. Accordingly, claim 1 is patentable over Onishi.

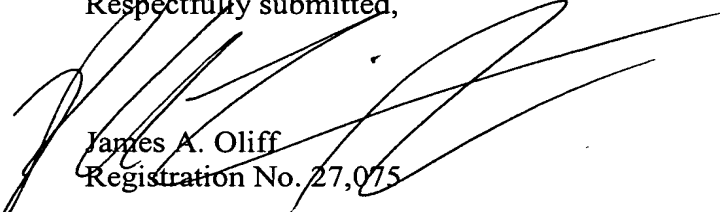
Claim 2 ultimately depends from claim 1, and thus includes all of the limitations of claim 1. Accordingly, claim 2 is patentable over Onishi for at least the reasons that claim 1 is patentable over Onishi. Reconsideration and withdrawal of the rejection are respectfully requested.

III. CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-6 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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Attachment:

Appendix
ASTM D2240

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<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>

APPENDIX

Changes to Specification:

Page 14, lines 10-13 are deleted.

Changes to Claims:

Claims 5 and 6 are added.